Test Report
Aggregate Gradation

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Wet Mix Plant
Material	Coarse Aggregates
Sample No	8
Date	7-Feb-2023

Weight of Sample: 10938.00 gms

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	53	0	0	0	100	100	Gradation satisfies the MORT&H Specification for Wet Mix macadam
2	45	235.5	2.15	2.15	97.85	95-100	
3	22.4	2729.7	24.96	27.11	72.89	60-80	
4	11.2	2119.14	19.37	46.48	53.52	40-60	
5	4.75	2194.76	20.07	66.55	33.45	25-40	
6	2.36	1539.6	14.08	80.63	19.37	15-30	
7	0.6	600.74	5.49	86.12	13.88	8-22	
8	0.075	1419.15	12.97	99.09	0.91	0-5	

Note:

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Yelahanka Zone
BBMP, Bangalore - 92

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Test Report
Aggregate Gradation

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Wet Mix Plant
Material	Coarse Aggregates
Sample No	9
Date	7-Feb-2023

Weight of Sample: 11013.00 gms

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	53	0	0	0	100	100	Gradation satisfies the MORT&H Specification for Wet Mix macadam
2	45	239	2.17	2.17	97.83	95-100	
3	22.4	2733.2	24.82	26.99	73.01	60-80	
4	11.2	2122.64	19.27	46.26	53.74	40-60	
5	4.75	2198.26	19.96	66.22	33.78	25-40	
6	2.36	1543.1	14.01	80.23	19.77	15-30	
7	0.6	604.24	5.49	85.72	14.28	8-22	
8	0.075	1422.65	12.92	98.64	1.36	0-5	

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Test Report
Aggregate Gradation

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Wet Mix Plant
Material	Coarse Aggregates
Sample No	10
Date	7-Feb-2023

Weight of Sample: 11088.00 gms

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	53	0	0	0	100	100	Gradation satisfies the MORT&H Specification for Wet Mix macadam
2	45	240.5	2.17	2.17	97.83	95-100	
3	22.4	2734.7	24.66	26.83	73.17	60-80	
4	11.2	2124.14	19.16	45.99	54.01	40-60	
5	4.75	2199.76	19.84	65.83	34.17	25-40	
6	2.36	1544.6	13.93	79.76	20.24	15-30	
7	0.6	605.74	5.46	85.22	14.78	8-22	
8	0.075	1425.15	12.85	98.07	1.93	0-5	

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Test Report
Liquid and Plastic Limit by Cone Apparatus

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Laboratory
Sample No	1
Sample Collection Date	18-Oct-2022
Tested Date	19-Oct-2022

Sl No	Description	Unit	Liquid Limit	Plastic Limit
	Penetration	mm	**Non Plastic**	**Non Plastic**
1	Container No	no		
2	Weight of container,(A)	gm		
3	Weight of container + wet soil, (B)	gm		
4	Weight of container + dry soil, (C)	gm		
5	Weight of water, D=(B - C)	gm		
6	Weight of dry soil, E=(C - A)	gm		
7	Water Content, D/E x 100 (%)	gm		

Comments: <6 so Non Plastic

Note:

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Test Report

Liquid and Plastic Limit by Cone Apparatus

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Laboratory
Material	Soil
Sample No	2
Sample Collection	18-Oct-2022
Tested Date	19-Oct-2022

Sl No	Description	Unit	Liquid Limit	Plastic Limit
	Penetration	mm	**Non Plastic**	**Non Plastic**
1	Container No	no		
2	Weight of container,(A)	gm		
3	Weight of container + wet soil, (B)	gm		
4	Weight of container + dry soil, (C)	gm		
5	Weight of water, D=(B - C)	gm		
6	Weight of dry soil, E=(C - A)	gm		
7	Water Content, D/E x 100 (%)	gm		

Comments: <6 so Non Plastic

Note:

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Test Report
Liquid and Plastic Limit by Cone Apparatus

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Wet Mix Plant
Material	Coarse Aggregates
Sample No	3
Date	19-Oct-2022

Sl No	Description	Unit	Liquid Limit	Plastic Limit
	Penetration	mm		
1	Container No	no		
2	Weight of container,(A)	gm		
3	Weight of container + wet soil, (B)	gm	**Non Plastic**	**Non Plastic**
4	Weight of container + dry soil, (C)	gm		
5	Weight of water, D=(B - C)	gm		
6	Weight of dry soil, E=(C - A)	gm		
7	Water Content, D/E x 100 (%)	gm		

Comments: <6 so Non Plastic

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Test Report

Liquid and Plastic Limit by Cone Apparatus

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Wet Mix Plant
Material	Coarse Aggregates
Sample No	4
Date	18-Jan-2023

Sl No	Description	Unit	Liquid Limit	Plastic Limit
	Penetration	mm	**Non Plastic**	**Non Plastic**
1	Container No	no		
2	Weight of container,(A)	gm		
3	Weight of container + wet soil, (B)	gm		
4	Weight of container + dry soil, (C)	gm		
5	Weight of water, D=(B - C)	gm		
6	Weight of dry soil, E=(C - A)	gm		
7	Water Content, D/E x 100 (%)	gm		

Comments: <6 so Non Plastic

Note:

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Test Report
Liquid and Plastic Limit by Cone Apparatus

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Wet Mix Plant
Material	Coarse Aggregates
Sample No	5
Date	18-Jan-2023

Sl No	Description	Unit	Liquid Limit	Plastic Limit
	Penetration	mm		
1	Container No	no		
2	Weight of container,(A)	gm		
3	Weight of container + wet soil, (B)	gm	**Non Plastic**	**Non Plastic**
4	Weight of container + dry soil, (C)	gm		
5	Weight of water, D=(B - C)	gm		
6	Weight of dry soil, E=(C - A)	gm		
7	Water Content, D/E x 100 (%)	gm		

Comments: <6 so Non Plastic

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PROJECT MANAGEMENT CONSULTANCY SERVICES

Test Report
Liquid and Plastic Limit by Cone Apparatus

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Wet Mix Plant
Material	Coarse Aggregates
Sample No	6
Date	18-Jan-2023

Sl No	Description	Unit	Liquid Limit	Plastic Limit
	Penetration	mm		
1	Container No	no		
2	Weight of container,(A)	gm		
3	Weight of container + wet soil, (B)	gm	**Non Plastic**	**Non Plastic**
4	Weight of container + dry soil, (C)	gm		
5	Weight of water, D=(B - C)	gm		
6	Weight of dry soil, E=(C - A)	gm		
7	Water Content, D/E x 100 (%)	gm		

Comments: <6 so Non Plastic

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Test Report
Liquid and Plastic Limit by Cone Apparatus

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Wet Mix Plant
Material	Coarse Aggregates
Sample No	7
Date	7-Feb-2023

Sl No	Description	Unit	Liquid Limit	Plastic Limit
	Penetration	mm		
1	Container No	no		
2	Weight of container,(A)	gm		
3	Weight of container + wet	gm		
4	Weight of container + dry	gm		
5	Weight of water, D=(B -	gm		
6	Weight of dry soil, E=(C -	gm		
7	Water Content, D/E x 100	gm	**Non Plastic**	**Non Plastic**

Comments: <6 so Non Plastic

Note:

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Test Report
Liquid and Plastic Limit by Cone Apparatus

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Wet Mix Plant
Material	Coarse Aggregates
Sample No	8
Date	7-Feb-2023

Sl No	Description	Unit	Liquid Limit	Plastic Limit
	Penetration	mm	**Non Plastic**	**Non Plastic**
1	Container No	no		
2	Weight of container,(A)	gm		
3	Weight of container + w	gm		
4	Weight of container + d	gm		
5	Weight of water, D=(E	gm		
6	Weight of dry soil, E=(C	gm		
7	Water Content, D/E x	gm		

Comments: <6 so Non Plastic

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Test Report

Liquid and Plastic Limit by Cone Apparatus

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Wet Mix Plant
Material	Coarse Aggregates
Sample No	9
Date	7-Feb-2023

Sl No	Description	Unit	Liquid Limit	Plastic Limit
	Penetration	mm	**Non Plastic**	**Non Plastic**
1	Container No	no		
2	Weight of container,(A)	gm		
3	Weight of container + we	gm		
4	Weight of container + dry	gm		
5	Weight of water, D=(B -	gm		
6	Weight of dry soil, E=(C -	gm		
7	Water Content, D/E x 10	gm		

Comments: <6 so Non Plastic

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Test Report
Liquid and Plastic Limit by Cone Apparatus

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Wet Mix Plant
Material	Coarse Aggregates
Sample No	10
Date	7-Feb-2023

Sl No	Description	Unit	Liquid Limit	Plastic Limit
	Penetration	mm		
1	Container No	no		
2	Weight of container,(A)	gm		
3	Weight of container + wet s	gm	**Non Plastic**	**Non Plastic**
4	Weight of container + dry s	gm		
5	Weight of water, D=(B - C	gm		
6	Weight of dry soil, E=(C - A	gm		
7	Water Content, D/E x 100	gm		

Comments: <6 so Non Plastic

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Test Report
Liquid and Plastic Limit by Cone Apparatus

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Wet Mix Plant
Material	Coarse Aggregates
Sample No	10
Date	7-Feb-2023

Sl No	Description	Unit	Liquid Limit	Plastic Limit
	Penetration	mm		
1	Container No	no		
2	Weight of container,(A)	gm		
3	Weight of container + wet s	gm		
4	Weight of container + dry s	gm		
5	Weight of water, D=(B - C	gm	**Non Plastic**	**Non Plastic**
6	Weight of dry soil, E=(C - A	gm		
7	Water Content, D/E x 100	gm		

Comments: <6 so Non Plastic

Note:

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Test Report
Field Density Test by Sand Replacement Method

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	IS: 2720 (Part - 16) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	At Site
Sample No	1
Tested Date	21-Oct-2022

Test Hole No	1
MDD	2.26
OMC in %	5.45
Bulk Density Ys	1.392
Weight of Sand In cone W1 (gm)	1195
Weight Of Wet soil From Hole (W2)	4942
Wt Of Sand +Cylinder Before Pouring (W3)gm	17000
Wt Of Sand +Cylinder After Pouring (W4) gm	12864
Wt Of Sand In Hole: W5 = W3 - W4- W1 (gm)	2941
Volume of Hole: V= W5/ Ys	2112.79
Bulk Density Yb= W2/V (gm/cc)	2.34
Moisture Meter Reading (%)	5.3
Moisture Content : w (From Graph In %)	-
Dry Density Yd = Yb/(1+W/100)	2.22
Field Compaction(%)	98.29

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Test Report
Field Density Test by Sand Replacement Method

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR
Mix Type	Wet Mix Macadam (WMM)
Contractor	Sri R. Lokesh
Test Method	IS: 2720 (Part - 16) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	At Site
Sample No	2
Tested Date	20-Jan-2023

Test Hole No	**2**
MDD	2.26
OMC in %	5.45
Bulk Density Ys	1.39
Weight of Sand In cone W1 (gm)	1195.00
Weight Of Wet soil From Hole (W2)	4954.00
Wt Of Sand +Cylinder Before Pouring (W3)gm	17000.00
Wt Of Sand +Cylinder After Pouring (W4) gm	12867.00
Wt Of Sand In Hole: W5 = W3 - W4- W1 (gm)	2938.00
Volume of Hole: V= W5/ Ys	2110.63
Bulk Density Yb= W2/V (gm/cc)	2.35
Moisture Meter Reading (%)	4.60
Moisture Content : w (From Graph In %)	-
Dry Density Yd = Yb/(1+W/100)	2.24
Field Compaction(%)	99.29

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Project Management Services

Summary of Frequencies of Field Tests and Lab Tests Conducted

Name of the work: Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04

Job No: MCTPL/BBMP/EE PD-YZ/PMC/P-/2022-23/QR

Contractor Sri R. Lokesh

Sl. No	Particulars of the Tests	Dense Graded Bituminious Macadam(DBM)			
		Quantity Cum	Frequency of Tests	Tests Required	Tests Carried Out
1	Quality of Binder	355.93	2 Test / lot	2	2
2	Aggregate Impact Value		1 Test / 350 m^3	2	2
3	Combined Flakiness & Elongation Indices		1 Test / 350 m^3	2	2
4	Aggregate Stripping Value		1Test / Source of Supply	1	1
5	Specific Gravity & Water Absorption of Aggregates		1Test / Source of Supply	1	1
6	Aggregate gradation		2 Test / day	2	2
7	Marshal Stability of the Mix		1 Test/400 tonnes (Min.2 Test)	2	2
8	Binder content and Mix Gradation		1 Test/400 tonnes (Min.2 Test)	2	2

Note: Frequency of tests as per Specifications MORT&H, V Revision, Section 900.

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Consultant

Contractor

ASSISTANT ENGINEER

ASSISTANT EXE ENGINEER

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Test Report
Quality of Bitumen

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-/2022-23/QR
Mix Type	Dense Graded Bituminious Macadam(DBM)
Contractor	Sri R. Lokesh
Test Method	IS : 73 – 2013 (Paving Bitumen) & Specification for Road & Bridge Works, MORT&H, Revision V.
Grade of Bitumen	VG30
Location	Hot Mix Plant
Material	Bitumen
Sample No	1
Sample Collection Date	24-Jan-2023
Tested Date	25-Jan-2023

Sl. No.	Description	Test Results	Requirement as per IS:73 - 2013
1	Penetration at 25^{0}C , 1 / 10 mm	46	Min. 45
2	Softening Point, (^{0}C)	49	Min. 47
3	Specific Gravity	0.97	Min. 0.97
4	Ductility at 27^{0}C, in cm	45	Min. 40
5	Flash Point, (^{0}C)	227	Min. 220

Note:

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Test Report

Quality of Bitumen

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-/2022-23/QR
Mix Type	Dense Graded Bituminious Macadam(DBM)
Contractor	Sri R. Lokesh
Test Method	IS : 73 – 2013 (Paving Bitumen) & Specification for Road & Bridge Works, MORT&H, Revision V.
Grade of Bitumen	VG30
Location	Hot Mix Plant
Material	Bitumen
Sample No	2
Sample Collection Date	24-Jan-2023
Tested Date	25-Jan-2023

Sl. No.	Description	Test Results	Requirement as per IS:73 - 2013
1	Penetration at 25^0C , 1 / 10 mm	50	Min. 45
2	Softening Point, (^{0}C)	52	Min. 47
3	Specific Gravity	0.97	Min. 0.97
4	Ductility at 27^0C, in cm	53	Min. 40
5	Flash Point, (^{0}C)	224	Min. 220

Note:

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Test Report

Aggregate Impact Value

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-/2022-23/QR
Mix Type	Dense Graded Bituminious Macadam(DBM)
Contractor	Sri R. Lokesh
Test Method	IS : 2386 (Part - 4) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Laboratory
Material	Coarse Aggregate
Sample No	1
Sample Collection Date	24-Jan-2023
Tested Date	27-Jan-2023

Sl. No.	Determination	Unit	Trails	
1	Weight of empty cylinder, w1	gm	960	960
2	Weight of container filled with Aggregate, w2	gm	1338	1332
3	Weight of the Aggregate before compaction, (w2 - w1) = w3	gm	378	372
4	Weight of the sample passing through 2.36 mm IS sieves after Impact, w4	gm	91	93
5	Weight of the sample retained on 2.36 mm IS sieve after Impact, w5	gm	287	279
6	Aggregate Impact Value (w4 / w3)x100	%	24.07	25.00
7	Specified Limit	%	27	

Results: Average Aggregate Impact Value: **24.54 %**

Note:

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Test Report
Aggregate Particle Shape

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-/2022-23/QR
Mix Type	Dense Graded Bituminious Macadam(DBM)
Contractor	Sri R. Lokesh
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Laboratory
Material	Coarse Aggregates
Sample No	1
Sample Collection Date	24-Jan-2023
Tested Date	27-Jan-2023

I.S. Sieves Size		Weight of Retained Sample on Each Sieve (minimum 200 Pieces) (gm)	Flakiness Index		Elongation Index	
Passing through IS Sieves (mm)	Retained on IS Sieves (mm)		Thickness Gauge	Weight of Aggregates in each fraction passing on thickness gauges (gm)	Length Gauge	Weight of Aggregates in Fraction retained on length gauges (gm)
63	50	0	33.9	0	-	0
50	40	0	27	0	81	0
40	25	0	19.5	0	58.5	0
31.5	25	0	16.95	0	-	0
25	20	1326.85	13.5	6.85	40.5	24.85
20	16	1532.28	10.8	211.28	32.4	238.28
16	12.5	986.45	8.55	181.45	25.6	188.45
12.5	10	456.58	6.75	58.58	20.2	64.58
10	6.3	256.84	4.89	78.84	14.7	85.84
	SW	4559	SWf	537	SWe	602

Flakiness Index 11.98 %
Elongation Index 13.43 %
Combined Flakiness and Elongation Indices : 25.41 %

Comments: Maximum allowable Combined Flakiness and Elongation Indices for DBM is 35%.

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Test Report

Aggregate Stripping Value

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-/2022-23/QR
Mix Type	Dense Graded Bituminious Macadam(DBM)
Contractor	Sri R. Lokesh
Test Method	IS : 6241 - 1971 & Specification for Road & Bridge Works, MORT&H, Revision
Location	Laboratory
Material	Coarse Aggregates / Bitumen
Sample No	1
Tested Date	28-Jan-2023
Type of Aggregate	Coarse Aggregate
Type of Binder	60 / 70 Grade
Percentage of Binder Used	5% by weight
Total weight of Aggregate	200 gms
Total weight of Binder	10 gms
Temperature of water bath	40^0C

Observation Number	Stripping Percentage	Average Percentage	Average Retained Coating (%)
1	3.6	3.77	96.23
2	3.9		
3	3.8		

Comments: Minimum allowable Aggregate Stripping Value for Dense Bituminous Macadam is 95%

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Test Report

Specific Gravity and Water Absorption

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-/2022-23/QR
Mix Type	Dense Graded Bituminious Macadam(DBM)
Contractor	Sri R. Lokesh
Test Method	IS: 2386 (Part - 111) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Laboratory
Material	Coarse Aggregates
Sample No	1
Sample Collection Date	24-Jan-2023
Tested Date	28-Jan-2023

Sl. No.	Particulars	Computations	Test Numbers		Mean
			Test 1	Test 2	
1	Weight of Empty Basket Immersed in Water	W_1 g	761	763	
2	Wt of Basket Filled with Aggregates Immersed in water	W_2g	2097	2047	
3	Weight of Saturated Aggregate in water	$W_s g = W_2 - W_1$	1336	1284	
4	Weight of saturated surface dry aggregate in Air	W_3 g	2132	2072	
5	Weight of water equal to the Volume of the Aggregate	$W_3 - W_s$	796	788	
6	Weight of Oven dried Aggregate	W_4g	2097	2035	
7	Specific Gravity	$W_4/(W_3 - W_s)$	2.63	2.58	2.61
8	Apparent Specific Gravity	$W_4/(W_4 - W_s)$	2.76	2.71	2.73
9	Water Absorption	$(W_4 - W_3)*100/W_4$	1.67	1.82	1.75

Comments: Maximum allowable Aggregate Water Absorption value for Dense bituminous Macadam is 2.0%.

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Test Report
Aggregate Gradation

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-/2022-23/QR
Mix Type	Dense Graded Bituminious Macadam(DBM)
Contractor	Sri R. Lokesh
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Laboratory
Material	Coarse Aggregates
Sample No	1
Sample Collection Date	24-Jan-2023
Tested Date	27-Jan-2023

Weight of Sample: 10930 gms

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	37.5	0	0.00	0.00	100.00	100	Gradation satisfies the MORT&H Specification for Dense graded Bituminous Macadam
2	26.5	486.72	4.45	4.45	95.55	90-100	
3	19	1498.57	13.71	18.16	81.84	71-95	
4	13.2	1582.95	14.48	32.65	67.35	56-80	
5	4.75	2238.47	20.48	53.13	46.87	38-54	
6	2.36	1472.61	13.47	66.60	33.40	28-42	
7	0.3	2189.26	20.03	86.63	13.37	7-21	
8	0.075	1042.79	9.54	96.17	3.83	2-8	

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Test Report

Aggregate Gradation

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-/2022-23/QR
Mix Type	Dense Graded Bituminious Macadam(DBM)
Contractor	Sri R. Lokesh
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Laboratory
Material	Coarse Aggregates
Sample No	2
Sample Collection Date	24-Jan-2023
Tested Date	27-Jan-2023

Weight of Sample: 10870 gms

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	37.5	0	0.00	0.00	100.00	100	Gradation satisfies the MORT&H Specification for Dense graded Bituminous Macadam
2	26.5	485.29	4.46	4.46	95.54	90-100	
3	19	1456.27	13.40	17.86	82.14	71-95	
4	13.2	1572.44	14.47	32.33	67.67	56-80	
5	4.75	2208.64	20.32	52.65	47.35	38-54	
6	2.36	1473.65	13.56	66.20	33.80	28-42	
7	0.3	2173.94	20.00	86.20	13.80	7-21	
8	0.075	1063.48	9.78	95.99	4.01	2-8	

Note:

i. The results indicated above are based on the tests carried out on the sample at site.

ii. The results relate only to the items tested.

iii. This test report should not be reproduced except in full, without written approval of this laboratory.

iv. Any query regarding the report must be reported immediately.

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Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

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PROJECT MANAGEMENT CONSULTANCY SERVICES

Test Report
Stability of Mix

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-/2022-23/QR
Mix Type	Dense Graded Bituminious Macadam(DBM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Laboratory
Sample No	1
Tested Date	30-Jan-2023

Sl. No.	Description	Unit	Test 1	Requirements as per MORT&H
1	Marshal Stability	KN	9.7	9 KN (min)
2	Marshal Flow	mm	3.2	2 – 5 mm
3	Percent of Air Voids in mix	%	3.3	3 - 6
4	Percent of Voids in Mineral Aggregates filled with Bitumen	%	67	65 – 75 %
5	Density	g/cc	2.3	-

Note:
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Test Report
Stability of Mix

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-/2022-23/QR
Mix Type	Dense Graded Bituminious Macadam(DBM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Laboratory
Sample No	2
Tested Date	30-Jan-2023

Sl. No.	Description	Unit	Test 2	Requirements as per MORT&H
1	Marshal Stability	KN	9.6	9 KN (min)
2	Marshal Flow	mm	4.5	2 – 5 mm
3	Percent of Air Voids in mix	%	4.6	3 - 6
4	Percent of Voids in Mineral Aggregates filled with Bitumen	%	72	65 – 75 %
5	Density	g/cc	2.3	-

Note:

i. The results indicated above are based on the tests carried out on the sample at site.
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Test Report
Binder Content and Mix Gradation

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-/2022-23/QR
Mix Type	Dense Graded Bituminious Macadam(DBM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	At Site
Sample No	1
Tested Date	30-Jan-2023

Sl. No.	Description	Unit	Computation	Test Result
1	Weight of Empty bowl before Extraction (E)	gm	Eb	1080
2	Weight of bowl + Sample before extraction (w_s)	gm	w_{sb}	1752
3	Weight of Sample taken for the test (S_b)	gm	$S_b = w_{sb} - Eb$	672
4	Weight of bowl + Sample after extraction (w_a)	gm	w_{sa}	1720
5	Weight of Sample after extraction (i.e. washed aggregates)	gm	$S_a = w_{sa} - Eb$	640
6	Weight of Filter paper before extraction (F_b)	gm	F_b	2
7	Weight of Filter paper after extraction (F_a)	gm	F_a	3
8	Weight of filler on filter paper (F_d)	gm	$F_d = F_b - F_a$	1
9	Weight of Bitumen without considering Filter paper (W_b)	gm	W_b	32
10	Weight of the Bitumen with considering Filter paper (W_a)	gm	$W_a = w_b - F_d$	31
11	Percentage of the Bitumen (i.e. Binder Content) ($\%_B$)	(%)	$W_a / SbX100$	4.61

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	37.5	0	0.00	0.00	100.00	100	Gradation satisfies the MORT&H Specification for Dense graded biyuminous macadam
2	26.5	26.49	4.14	4.14	95.86	90-100	
3	19	75.84	11.85	15.99	84.01	71-95	
4	13.2	102.95	16.09	32.08	67.93	56-80	
5	4.75	147.88	23.11	55.18	44.82	38-54	
6	2.36	65.89	10.30	65.48	34.52	28-42	
7	0.3	132.25	20.66	86.14	13.86	7-21	
8	0.075	62.34	9.74	95.88	4.12	2-8	

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Test Report
Binder Content and Mix Gradation

Project Name	Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04
Client	Executive Engineer - Project Division Yelahanha Zone
Job No	MCTPL/BBMP/EE PD-YZ/PMC/P-/2022-23/QR
Mix Type	Dense Graded Bituminious Macadam(DBM)
Contractor	Sri R. Lokesh
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	At Site
Sample No	2
Tested Date	31-Jan-2023

Sl. No.	Description	Unit	Computation	Test Result
1	Weight of Empty bowl before Extraction (E)	gm	Eb	1080
2	Weight of bowl + Sample before extraction (w_s)	gm	w_{sb}	1739
3	Weight of Sample taken for the test (S_b)	gm	$S_b = w_{sb} - Eb$	659
4	Weight of bowl + Sample after extraction (w_a)	gm	w_{sa}	1707
5	Weight of Sample after extraction (i.e. washed aggregates)	gm	$S_a = w_{sa} - Eb$	627
6	Weight of Filter paper before extraction (F_b)	gm	F_b	2
7	Weight of Filter paper after extraction (F_a)	gm	F_a	3
8	Weight of filler on filter paper (F_d)	gm	$F_d = F_b - F_a$	1
9	Weight of Bitumen without considering Filter paper (W_b)	gm	W_b	32
10	Weight of the Bitumen with considering Filter paper (W_a)	gm	$W_a = w_b - F_d$	31
11	Percentage of the Bitumen (i.e. Binder Content) ($\%_B$)	(%)	W_a/ SbX100	4.70

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	37.5	0	0.00	0.00	100.00	100	Gradation satisfies the MORT&H Specification for Dense graded biyuminous macadam
2	26.5	34.98	5.58	5.58	94.42	90-100	
3	19	76.58	12.21	17.79	82.21	71-95	
4	13.2	104.95	16.74	34.53	65.47	56-80	
5	4.75	157.26	25.08	59.61	40.39	38-54	
6	2.36	67.32	10.74	70.35	29.65	28-42	
7	0.3	132.69	21.16	91.51	8.49	7-21	
8	0.075	22.57	3.60	95.11	4.89	2-8	

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Project Management Services

Summary of Frequencies of Field Tests and Lab Tests Conducted

Name of the work: Package-5 (1) Improvements of Road Adjacent to Yelahanka Lake from Kenchenahalli to Chowdeshwari Temple in Ward No.02 (2) Improvements and Asphalting to New post office main road and cross roads in ward No. 01 (3) Improvements and Asphalting to Sugappa layout cross roads in ward No. 01 (4) Improvements and Asphalting to Shanimahathma swamy temple road and Surabhi layout 2nd main and cross roads in ward No. 01 (5) Asphalting to Balance roads in A & B sector of Yelhanka New Town in Ward No. 04

Job No: MCTPL/BBMP/EE PD-YZ/PMC/P-3158/2022-23/QR

Contractor Sri R. Lokesh

Sl. No	Particulars of the Tests	Bituminous Concrete (BC)			
		Quantity Cum	Frequency of Tests	Tests Required	Tests Carried Out
1	Quality of Binder	287.29	2 Test / lot	2	2
2	Rate of Spread of Tack Coat/ Prime Coat		3 Test / Day	3	3
3	Aggregate Impact Value		1 Test / 350 m^3	1	1
4	Combined Flakiness & Elongation Indices		1 Test / 350 m^3	1	1
5	Aggregate Stripping Value		1Test / Source of Supply	1	1
6	Specific Gravity & Water Absorption of Aggregates		1Test / Source of Supply	1	1
7	Aggregate gradation		2 Test	2	2
8	Marshal Stability of the Mix		1 Test/400 tonnes (Min. 2 Test)	2	2
9	Binder content and Mix Gradation		1 Test/400 tonnes (Min. 2 Test)	2	2

Note: Frequency of tests as per Specifications MORT&H, V Revision, Section 900.

Mecadez Core Technologies Private Limited

Consultant

Contractor

ASSISTANT ENGINEER

ASSISTANT EXECUTIVE ENGINEER

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